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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,524	11/15/2000	CLARENCE A GREEN		3620

2512 7590 10/24/2003

PERMAN & GREEN
425 POST ROAD
FAIRFIELD, CT 06824

EXAMINER

MICHALSKI, JUSTIN I

ART UNIT	PAPER NUMBER
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2644

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DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/713,524

Applicant(s)

GREEN, CLARENCE A

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/15/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5,&7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Händel (US Patent 5,943,429).

Regarding Claim 1, Händel discloses a method of suppressing noise in a signal containing noise to provide a noise suppressed signal in which an estimate is made of the noise and an estimate is made of speech together with some noise (Händel discloses estimated noise and estimated noisy speech) (Column 1, lines 11-25).

Regarding Claim 2, Händel further discloses the signal comprises speech (Column 1, line 11).

Regarding Claim 3, Händel further discloses the level of noise included in the estimate of the speech together with some noise is variable so as to include a desired amount of noise in the noise suppressed signal (Händel discloses page 5 table 2 which gives spectral subtraction methods that could be modified to vary the amount of noise in the suppressed signal).

Regarding Claim 4, Händel further discloses the level of the noise provides an acceptable level of context information (Händel discloses enhancement of speech signal (i.e. context information) (Column1, lines 11-16)).

Regarding Claim 5, Händel further discloses the level of the noise is below the mask limit of the speech and so is not audible to a listener (If noise is below the mask limit of speech it will not be audible since speech will mask the noise. If processed by a device as disclosed by Händel the noise will be reduced (Column 1, lines 59-61) resulting in an even lower noise level below the masking level of speech and will not be audible to a listener).

Regarding Claim 6, Händel further discloses the level of noise approaches the mask limit of the speech and so some noise context information is left in the signal (Händel discloses that spectral subtraction methods are not perfect and will allow some noise through to the output signal. Which would also be the case when the noise level approaches the mask limit of the speech) (Column 1, lines 27-36)

3. Claims 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Eatwell et al. (US Patent 5,768,473).

Regarding Claim 7, Eatwell et al. discloses a method of producing a gain coefficient for noise suppression in which a first estimation of the gain coefficient is

made adaptively and this first estimation is used to produce a noise estimation (Figure 2, Output W of wiener gain calculator 5) which is then used to produce a second estimation (Output C of gain modifier 8) of the gain function.

Regarding Claim 8, Eatwell et al. further discloses the estimated noise is power spectral density (Eatwell et al. discloses improved spectral estimates (i.e. spectral density) (Column 3, lines 1-3)).

Regarding Claim 9, Eatwell et al. further discloses the first estimation is used to up-date the estimated noise (Figure 2 discloses first estimation W is used in a feedback configuration through power measure 9 and signal power estimator 4 to return to noise estimator 3 to up-date the estimated noise).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Vähätalo et al. (US Patent 5,963,901). Vähätalo et al. discloses noise estimate updated by coefficient (Figure 2).

Zack (US Patent 6,088,668). Zack discloses two coefficients for weighted gain noise suppression (Figure 4).

Urbanski (US Patent 5,544,250). Urbanski discloses a noise suppression system using both a noise spectrum and signal with noise spectrum.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

JIM


XU MEI
PRIMARY EXAMINER